

## CLAIMS:

1. A process for producing a pet food comprising:  
mixing a protein source to produce an emulsion;  
heating said emulsion above the boiling point of water;  
pressurizing said emulsion in a confined pressurized zone;  
externally coloring said emulsion in said confined pressurized zone; and  
discharging said emulsion in discrete pieces or chunks of pet food.
2. The process of Claim 1 wherein said protein source comprises at least one of a vegetable source, a meat source, and a meat by-product source.
3. The process of Claim 2 wherein said vegetable source comprises at least one of a soy source, a corn source, a rice source, a peanut source, a sunflower source, a linseed source, a canola source, and a wheat source.
4. The process of Claim 2 or Claim 3 wherein said meat source comprises at least one of a beef source, a chicken source, a fish source, and a pork source.
5. The process of Claim 4 wherein said meat source contains from about 15% to about 25% fat by weight.

6. The process of Claim 4 wherein said meat source contains less than 15% fat by weight.

7. The process of any one of the preceding Claims wherein the emulsion has a protein to fat ratio of at least 1.5:1.

8. The process of any one of the preceding Claims wherein said emulsion is heated to a temperature between about 104°C and about 118°C.

9. The process of any one of the preceding Claims wherein said emulsion has a moisture content from about 45% to about 80% by weight.

10. The process of any one of the preceding Claims wherein said confined pressurized zone is at least one of an elongated tubular member and a holding tube.

11. The process of Claim 10 wherein the emulsion is restricted in said holding tube for a predefined period of time.

12. The process of Claim 10 or Claim 11 wherein the emulsion is contained in said holding tube having a pressure above the vapor pressure of said emulsion.

13. The process of Claim 12 wherein the emulsion is retained in said holding tube under a pressure greater than its vapor pressure until the protein in said emulsion has coagulated to form a firm emulsion .

14. The process of any one of the preceding Claims further comprising the step of disrupting the emulsion to form individual pieces of pet food having irregular exterior surface contours.

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15. The process of Claim 14 comprising disrupting the emulsion mechanically.

16. The process of Claim 15 wherein said step of disrupting the emulsion comprises using an injector/shredder assembly.

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17. The process of Claim 16 wherein said injector/shredder assembly comprises at least a injector assembly and a shredder assembly.

18. The process of Claim 17 wherein said injector assembly comprises a means of  
15 injecting steam to disrupt the emulsion.

19. The process of any one of Claims 16 to 18 comprising the step of utilizing said injector assembly to inject a negatively charged colorant into the emulsion.

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20. The process of any one of the preceding Claims wherein coloring the emulsion comprises adhering a colorant to said emulsion.

21. The process of Claim 20 wherein said colorant comprises at least one of an oil based colorant and a water-soluble colorant.

22. The process of Claim 21 wherein said colorant further comprises at least one of a flavor and a nutrient.

5 23. The process of any one of Claims 20 to 22 wherein said colorant is negatively charged with respect to the emulsion.

24. The process of Claim 23 wherein said colorant comprises a water soluble, caramel color having a negative charge with respect to the emulsion.

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25. The process of any one of Claims 20 to 24 wherein said colorant is capable of adhering to the emulsion without the presence of a binder.

15 26. The process of any one of Claims 1 to 13 wherein said discharging comprises the step of removing said emulsion from said confined pressurized zone and cutting said colored emulsion in pieces of varying size, shape and color.

27. The process of Claim 26 wherein said colored emulsion has a moisture content from about 50% to about 65% by weight.

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28. A process for producing a pet food having a layered, meat-like appearance and chunky, irregularly-shaped, individual pieces having a darkened exterior surfaces to simulate grill marks which comprises:

passing a product mass through a confined processing zone; and

contacting a portion of the product mass with colorant while in the confined processing zone.

29. The process of Claim 28 wherein said product mass consists of an emulsion comprising at least one of a meat source and a dry proteinaceous source.

30. The process of Claim 28 or Claim 29 wherein said product mass comprises less than 15% fat by weight.

31. The process of any one of Claims 28 to 30 wherein said product mass has a moisture content from about 50% to about 65% by weight.

32. The process of any one of Claims 28 to 31 wherein said colorant adheres to the emulsion without the presence of a binder.

33. The process of any one of Claims 28 to 32 wherein said colorant is selected from the group consisting of water-soluble colorants and oil soluble colorants.

34. The process of any one of Claims 28 to 33 wherein said colorant is negatively charged with respect to said product mass to promote adhesion of said colorant to said product mass.

35. The process of any one of Claims 28 to 34 wherein said colorant comprises a colored solution, which comprises from about 30% to about 60% colorant by weight and from about 70% to about 40% water by weight.

5 36. The process of Claim 35 wherein said colored solution is injected into said confined processing zone at a pressure that is higher than the pressure inside said confined zone and at a flow rate from about 1% to about 20% by weight of the product mass flow rate.

10 37. The process of any one of Claims 28 to 36 wherein said confined processing zone comprises a holding tube under a pressure greater than its vapor pressure and the process comprises maintaining the pressure until the protein in said emulsion has coagulated to form a firm emulsion.

15 38. The process of Claim 37 further comprising the step of disrupting the emulsion in the holding tube to cause it to be divided into the said chunky, irregularly-shaped pieces.

39. A pet food product comprising individual pieces of a food product mass having a base color and a contrasting exterior color that simulates grill marks on natural meat that  
20 has been chopped into irregularly shaped individual pieces prior to serving.

40. The pet food product of Claim 39 wherein said pieces consist of a solidified emulsion comprising at least one of a meat source, a dry proteinaceous source and a vegetarian food source.

41. The pet food product of Claim 40 wherein the exterior color comprises a colorant selected from the group consisting of water-soluble colorants and oil-soluble colorants.

5 42. The pet food product of Claim 41 wherein said colorant adheres to the emulsion without the presence of a binder.

43. The pet food product of Claim 41 or Claim 42 wherein said colorant is negatively charged with respect to said product mass pieces to promote adhesion of said colorant to  
10 said pieces.

44. The pet food product of any one of Claims 39 to 43 wherein said pieces comprise less than 15% fat by weight.

15 45. The pet food product of any one of Claims 39 to 44 wherein said pieces have a moisture content from about 50% to about 65% by weight.

46. The pet food product of any one of Claims 39 to 45 wherein a minor portion of the pieces has the contrasting color on substantially all of their exterior surface.

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47. The pet food product of Claim 46 comprising a mixture of said pieces with further individual pieces having the single base color on substantially their entire exterior surface.

48. A pet food product that has an underlying base colour throughout the product and a contrasting exterior colour that simulates grill marks on natural meat that has been chopped into chunky, irregularly-shaped, individual pieces prior to serving, the pet food product comprising a mixture of

- 5 (1) first individual pieces having a single base colour on their exterior surface  
(2) second individual pieces having a portion of their exterior surface bearing the contrasting colour,  
a minor portion of the second pieces having the contrasting colour on substantially all of their exterior surface.

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49. The product of Claim 48 wherein said second pieces comprise less than 15% fat by weight.

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